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Big Fire Season Underway in Southern Africa as International Experiment Studies Impacts

Fires routinely scorch the Southern African landscape at this time of year, blackening an area larger than Montana, Wyoming, Idaho, North Dakota and South Dakota combined. But this year's burning season could be nearly twice as big as usual according to researchers taking part in a NASA-supported field experiment studying the impact of these fires on global climate and the region's air quality and ecosystems.

SAFARI 2000, the Southern African Regional Science Initiative, brings together nearly 200 African, U.S., and international scientists in a multidisciplinary research effort aimed at understanding the sustainability of the region's sensitive and pressured ecosystems. An intensive six-week field experiment began on August 13 combining observations from NASA's Terra and Landsat 7 spacecraft, NASA's ER-2 high-altitude research aircraft, and several other aircraft and ground stations. The base of operations is in Pietersburg, South Africa.



*NASA photo.
NASA's ER-2 high-altitude aircraft takes off from Pietersburg's Gateway International Airport in South Africa's Northern Province.*

SAFARI 2000 coincides with Southern Africa's dry season, the time of the most extensive biomass burning. The region is subject to some of the highest levels of biomass burning in the world.

August and September are the peak months for fires in most of Southern Africa. In an average year, nearly 500,000 square miles of grasslands burns in Africa south of the equator. The region's heaviest burning is concentrated in the moist subtropical belt that includes Angola, the southern Congo, Zambia, northern Mozambique, and southern Tanzania.

SAFARI 2000 researchers are using an arsenal of airborne and ground-based

scientific instruments to sample the chemistry and measure the thickness of the smoke plumes, map the movements of large plumes, and investigate how smoke and other fine particles affect clouds. The collective data will be used to improve the ability of new instruments on Terra to monitor active fires, map "burn scars" left after the fires, and measure the amount of carbon monoxide in the lower atmosphere.

SAFARI 2000 planners track the changing location of fires with daily satellite maps provided by researchers at NASA's Goddard Space Flight Center. At several times during the field experiment, preplanned fires in protected areas such as game reserves are set to coincide with spacecraft passes over the region. Aircraft flights are also coordinated with these burns so that detailed measurements can be made of the fire and smoke plume.

Fire management policies in South Africa's largest game reserve, Kruger National Park, have changed over the years from a ban on all fires to a systematic cycle of controlled burns over the entire park.

Both practices resulted in unwanted changes to eco-systems and losses of biodiversity. As a result, Kruger instituted a new policy in the mid-1990s of fighting all man-made fires and allowing all natural fires (those

ignited by lightning) to burn uncontrolled.

Madikwe Game Reserve in northern South Africa has adopted a different experimental approach. Small areas of the reserve's grasslands are intentionally burned on a schedule designed by computers to mimic the natural cycles and patterns of fires. One such controlled burn of 250 acres in Madikwe was set on the morning of August 20 to coincide with SAFARI 2000 research activities.

Further information on SAFARI 2000 is available at: <http://pao.gsfc.nasa.gov/gsfsc/EARTH/enviro/safari2000.htm>

Wallops Shorts

Balloon Launches

A NASA scientific balloon was successfully launched Aug. 25 from Lynn Lake, Manitoba, Canada. The 39.57 million cubic foot balloon carried a cosmic and heliospheric physics experiment for Dr. Paul Everson, University of Delaware. Total flight time was 24 hours, 18 minutes.

An 11.82 million cubic foot NASA scientific balloon was successfully launched Aug. 30 from Palestine, Texas. This was a reflight of the Aug. 19 launch for Dr. Jack Tueller, NASA Goddard Space Flight Center. The payload was a high energy astrophysics experiment. Total flight time was 7 hours, 31 minutes.

A NASA scientific balloon was successfully launched Sept. 2 from Lynn Lake, Manitoba, Canada. The 39.57 million cubic foot balloon carried a cosmic and heliospheric physics experiment for Dr. Robert Streitmatter, NASA Goddard Space Flight Center. Total flight time was 2 hours and 23 minutes. The experiment pressure vessel suffered a rapid pressure loss on ascent, and the flight was terminated by command in a safe recovery area. The payload separated from the parachute prematurely, resulting in a free fall and destruction of the payload.

Sounding Rocket Launch

A NASA Terrier-Black Brant sounding rocket was successfully launched from the White Sands Missile Range, N.M., on Sept. 5. The payload was a solar physics experiment for Dr. Leon Golub, Smithsonian Astrophysical Observatory. Preliminary indications are that the attitude control pointing system failed to achieve the target and no science data was obtained. The payload was recovered.

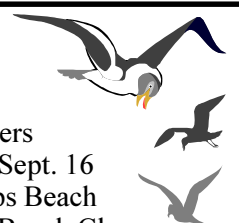
Fire Department Responses

Aug. 31 to Sept. 7
Aircraft Standbys — 30
Fire alarms — 2
Ambulance Calls — 2
Hazardous Materials Call — 1
Mutual Aid Assistance — 1 Motor vehicle accident in Atlantic.

Wanted

Who: Volunteers
When: 9 a.m., Sept. 16
Where: Wallops Beach
What: Annual Beach Cleanup

Call Keith, x1579 or Betty, x1584.



Where'd Summer Go?

Ted Wilz, Senior Meteorologist

The cool, damp, cloudy weather that has dominated the summer of 2000 continued into August making it seem more like early fall on many occasions. Average temperatures were 1.6 degrees cooler than normal, continuing a trend that began in July.

While July and August are normally our two hottest months, once again we set no new record highs during August. In fact, we only reached 90 degrees or better on two days (Aug. 7 and 8). The 92-degree reading on the Aug. 7 was the warmest temperature of the month.

New record lows were established on August 21 and 22 when early morning low temperatures hit 54 and 53 degrees respectively. This broke the old record by 2 degrees on the 21st and 4 degrees on the 22nd. With frequent cloudiness and abundant precipitation, it's easy to understand why temperatures remained so cool.

Rainfall totaled 5.23 inches, over 1-½ inches above our normal amount of 3.73 inches. We had measurable precipitation on 15 days in August, instead of our normal 8 days.

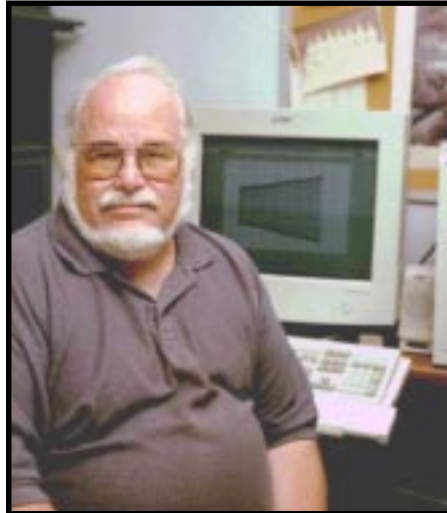
An upper atmospheric trough took a liking to the eastern U.S. and decided to take up permanent residence during the last two weeks of the month.



So what lies in store for us weather-wise? October and November are usually the driest time of the year along the Eastern Shore. Precipitation during October averages 2.94 inches, with measurable rainfall usually occurring on only 7 days of the month.

Temperatures for October usually cool off significantly. Average highs start out in the low 70's but cool off to the low 60's by month's end. Low temperatures start out in the mid 50's at the beginning of October but are usually in the mid 40's by the time November approaches. October has seen temperatures as high as 89 degrees at the beginning of the month. There have been some other extremes. The mercury hit a monthly record low of 26 degrees on October 28, 1976! October can be a month when you get to use your bathing suit and fireplace.

This year's hurricane season has been somewhat uneventful up until now. We should not let our guard down, because we're far from out of the woods. September and October have characteristically been when tropical storms and hurricanes have made themselves felt in our area. Just last September, Hurricane Floyd and other tropical events were the main sources of the nearly 10 inches of rainfall that fell over Wallops. That was without a storm really coming close to our location. Floyd actually made landfall near Wilmington, NC, where the brunt of the storm was felt. Stay safe and dry!



Dennis Melvin Retires

Dennis Melvin, (above) retired effective Sept. 1, 2000 after more than 36 years of service to NASA.

In 1964, Melvin began his career at what was then NASA Wallops Flight Center in support of Range Safety developing algorithms and software that supported project and destruct decisions for the many missions that were launched in the years to follow. He also developed modeling software for the Sounding Rocket Program to enable effective planning of mission trajectories for science missions. Melvin supported orbital science missions including the Geodetic Earth Observing Satellite-C (GEOS-C), developing flight and ground software to support GEOS satellites and, specifically, the GEOS Enhanced Scheduler (GEES) series of flight systems, among others.

Melvin received a master's degree from Sanford University in 1977 and applied his expertise to Sounding Rocket Program mission analysis for a multitude of missions. His most recent accomplishment included broad support of mission planning and scheduling for the Ground Network Mission Set and the development of advanced impact prediction algorithms for Range and Range Safety use.

Basketball League Forms

It's time to organize the 2000 Basketball League. League play will start on Sept. 28. Games are played on Thursday evenings beginning at 5:00 p.m. Player fees are \$25 per person. Anyone interested in learning more about the Basketball League should contact Roland Wescott, x1624; Mersha Bailey, x2656; Chico Ayers, x2477; or Linda Wiles, x1173.

Soliciting is a "No-No"

Business solicitation is prohibited on NASA Wallops Main Base and Island with the exception of employee-service programs approved and publicized by either GEWA or WEMA and vendor product demonstrations approved by procurement or technical personnel. In such cases, any personal solicitation will be at an identified facility and not by individual office visits. Be advised that, except for the Combined Federal Campaign, any fundraising activity is prohibited on the Main Base and Island.

When a Security Receptionist calls and seeks your approval for someone to access the Facility, be sure that you personally know and are expecting the visitor and are aware that he/she has an appointment or is scheduled to attend a meeting with you. If you observe someone soliciting for business by roaming the hallways or going from office-to-office, report the matter immediately to the Wallops Security Office, x2222.

Exchange Store Hours

Effective Wednesday, Sept. 6, the hours of operation for the Wallops Exchange Store located in Building E2 changed to 8:45 a.m. until 4:15 p.m., Monday through Friday.

Mark Your Calendar for this Favorite Event

The annual International Luncheon is scheduled for Thursday, October 5 beginning at 11:30 a.m. in Building F-3. Admission: one covered dish of any national origin with its recipe. Appropriate native attire is suggested. A Wallops International Cookbook is being prepared that will include the dishes available at the luncheon. More details to follow.

Contact Lisa Johnson, x1412, if you have "international" decorations you are willing to loan for that day. This activity is sponsored by the Equal Opportunity Programs Office and the Wallops Exchange and Morale Association. For more information or to register your dish, contact Sandra Banks, x2526, or Lisa Johnson, x1412.

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